



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: SPEY Mk511 BYPASS RATIO: 0.6
 UNIQUE ID NUMBER: 8RR043 PRESSURE RATIO (π_{oo}): 19.9
 COMBUSTOR:
 ENGINE TYPE: MTF RATED THRUST (F_{oo}) (kN): 50.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{oo} (g/kN) or SN	232.4	395.8	71.0	69.7
AS % OF ORIGINAL LIMIT	1185.5	335.4	89.0	189.2
AS % OF CAEP/2 LIMIT (NO _x)			111.2	
AS % OF CAEP/4 LIMIT (NO _x)			120.6	
AS % OF CAEP/6 LIMIT (NO _x)			125.7	
AS % OF CAEP/8 LIMIT (NO _x)			138.9	

DATA STATUS

x PRE-REGULATION
 - CERTIFICATION
 x REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 x OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F _{oo})	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	0.889	0.98	1.81	23.27	66.2
CLIMB OUT	85	2.2	0.726	1.32	2.06	19.18	
APPROACH	30	4.0	0.279	7.23	20.30	7.94	
IDLE	7	26.0	0.119	56.73	97.96	1.48	
LTO TOTAL FUEL (kg) or EMISSIONS (g)			386	11179	19810	3513	-
NUMBER OF ENGINES				14	14	13	10
NUMBER OF TESTS				15	15	14	10
AVERAGE D _p /F _{oo} (g/kN) or AVERAGE SN (MAX)				217.0	382.0	69.1	66.2
SIGMA (D _p /F _{oo} in g/kN, or SN)				82.8	66.5	7.4	7.2
RANGE (D _p /F _{oo} in g/kN, or SN)				109-360	233-522	52.5-81.4	50.4-71.3

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	
TEMPERATURE (K)	
ABS HUMIDITY (kg/kg)	0.0035-0.0126

FUEL

SPEC	DERD 2494
H/C	1.94
AROM (%)	20

MANUFACTURER: Rolls-Royce plc
 TEST ORGANIZATION: Rolls-Royce Ltd
 TEST LOCATION: Derby
 TEST DATES: 23/05/1985-28/05/1985

REMARKS

1. SN (char) wrongly calculated originally as 77.9 [1RR015].
2. Corrected in Version 15 to 69.7 and % of standard recalculated.
3. Estimate SN mode data by use of Calvert method

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)